1. ② Describe (*a*) the *parallelogram law*, (*b*) the *triangle rule*.

2. ⑦ The 500-N force **F** as shown is to be resolved into two forces **A** and **B** where $A = 300$ N, $B = 700$ N, and $0 < \theta_A < 90°$. Using the *parallelogram law*, determine the directional angles θ_A and θ_B.

3. ① From which *two teachers* have you been advised to learn your basics in mechanics?
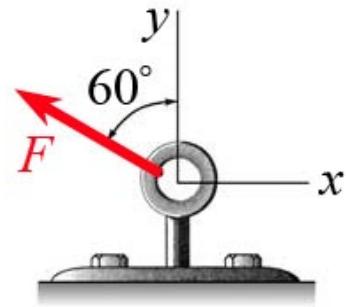

1. (*a*) The *parallelogram law* states that the sum of two vectors is a single vector, called their *resultant*, given by the directed diagonal of a parallelogram if the two sides directed away from the tail of this diagonal are equal to these two vectors. (*b*) The *triangle rule* states that when two vectors are drawn to scale and in tip-to-tail fashion, the vector connecting, and directed from, the tail of the first vector to the tip of the second vector gives the resultant of those two vectors. ②

2. $F = 500$ N, $A = 300$ N, $B = 700$ N

$$\theta_F = 90° + 60° = 150°$$

$\theta_A = 30°$ ② $\theta_B = 171.8°$ ②
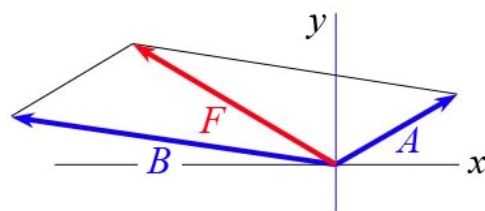
etc. ③

3. I have been advised to learn my basics in mechanics from the *Speaking Teacher* in the class and the *Silent Teacher* on the pages of the books and the Internet. ①